ABSTRACT OF THE DISCLOSURE

A system **30** and method(s) **100** for thermal treatment of a selected target within a subject is disclosed. System **30** includes RF source **10,** phase shifter **14,** impedance matching network **11** and resonator **13.** Applicator **3** conveys output signal **17** from energy source **10** through surface **6** of biological tissue **4** to predetermined energy dissipation zone **5** after output **17** has been processed by the phase shifter **14,** IMN **11** and resonator **13.** Stationary water molecules **1,** such as those in fat cells, are preferentially heated. Operation of system **30** produces a reverse thermal gradient so that surface **6** of biological tissue **4** is maintained at a lower temperature than predetermined energy dissipation zone **5** without a cooling device. The invention is useful in selective heating of cellulite bodies as a means of treating cellulite.